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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,989	09/19/2003	Kendall Hollis	S-100,628	6651
35068	7590	05/11/2005	EXAMINER	
UNIVERSITY OF CALIFORNIA LOS ALAMOS NATIONAL LABORATORY P.O. BOX 1663, MS A187 LOS ALAMOS, NM 87545			SIMONE, CATHERINE A	
		ART UNIT		PAPER NUMBER
				1772

DATE MAILED: 05/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/666,989	HOLLIS ET AL.	
	Examiner	Art Unit	
	Catherine Simone	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 16 February 2005.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-8 is/are pending in the application.
 4a) Of the above claim(s) 6-8 is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1-5 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date. _____

5) Notice of Informal Patent Application (PTO-152)
 6) Other: _____

DETAILED ACTION

Withdrawn Rejections

1. The 35 U.S.C. 102 rejection of claims 1-5 as anticipated by Dietrich of record in the Office Action mailed 2/8/05, Pages 3-4, Paragraph #3 has been withdrawn due to the Applicants amendment filed 2/16/05.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Williams (US 2,658,015).

Williams discloses an article comprising a surface on the article (Fig. 1, #4) for supporting a coating (Fig. 1, #2), undercut grooves (Fig. 1, #5) defined by the article depending beneath the surface to a bottom portion, the grooves having an upper width on the surface and a lower width on the bottom portion connected by side walls (Fig. 1, #6), where at least one of the side walls connects the upper width and the lower width to form an undercut angle with the surface less than 90°, the coating (Fig. 1, #2) filling the undercut grooves (Fig. 1, #5), thereby creating weak paths within the coating and the coating ranging above the surface with a coating

thickness from about 0.1 to 50 mm (see col. 6, lines 61-71). Regarding claim 3, the undercut grooves are in parallel alignment (Fig. 1, #5).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (US 2,658,015).

Williams discloses an article comprising a surface on the article (Fig. 1, #4) for supporting a coating (Fig. 1, #2), undercut grooves (Fig. 1, #5) defined by the article depending beneath the surface to a bottom portion, the grooves having an upper width on the surface and a lower width on the bottom portion connected by side walls (Fig. 1, #6), where at least one of the side walls connects the upper width and the lower width to form an undercut angle with the surface less than 90°, the coating (Fig. 1, #2) filling the undercut grooves (Fig. 1, #5), thereby creating weak paths within the coating and the coating ranging above the surface with a coating thickness from about 0.1 to 50 mm (see col. 6, lines 61-71). However, Williams fails to disclose the undercut grooves having a depth corresponding to a range from about 0.1-1 times the coating thickness, a lower width having a range of about 0.1-100 times the depth, an upper width having a range of about 0.1-100 times the depth and a centerline to centerline distance corresponding to a range of about 0.5-100 times the depth. The optimum ranges for the depth, the lower width, the

upper width and the centerline to centerline distance of the undercut grooves would be readily determined through routine experimentation by one having ordinary skill in the art depending on the desired end results. Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have provided the undercut grooves in Williams with a depth corresponding to a range from about 0.1-1 times the coating thickness, a lower width having a range of about 0.1-100 times the depth, an upper width having a range of about 0.1-100 times the depth and a centerline to centerline distance corresponding to a range of about 0.5-100 times the depth, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art in absence of showing unexpected results. *MPEP 2144.05 (II)*.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Williams (US 2,658,015) in view of Matsui et al. (US 5,244,746).

Williams discloses an article comprising a surface on the article (Fig. 1, #4) for supporting a coating (Fig. 1, #2), undercut grooves (Fig. 1, #5) defined by the article depending beneath the surface to a bottom portion, the grooves having an upper width on the surface and a lower width on the bottom portion connected by side walls (Fig. 1, #6), where at least one of the side walls connects the upper width and the lower width to form an undercut angle with the surface less than 90°, the coating (Fig. 1, #2) filling the undercut grooves (Fig. 1, #5), thereby creating weak paths within the coating and the coating ranging above the surface with a coating thickness from about 0.1 to 50 mm (see col. 6, lines 61-71). However, Williams fails to disclose the undercut grooves including a raised center within the bottom portion. Matsui et al. teaches that it is old and well-known in the art to have a raised center within the bottom portion of

undercut grooves (Fig. 2, #10) for the purpose of serving to promote the plastic flow of the one material, i.e. the softer material, into the overhang groove in the other material, i.e. the harder material (see col. 6, lines 47-55 and 57-61). Therefore, it would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to have provided the undercut grooves in Williams with a raised center in the bottom portion as suggested by Matsui et al. in order to serve to promote the plastic flow of the one material, i.e. the softer material, into the overhang groove in the other material, i.e. the harder material.

Response to Arguments

7. Applicant's arguments with respect to claims 1-5 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Catherine Simone whose telephone number is (571)272-1501. The examiner can normally be reached on 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on (571) 272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CA
Catherine A. Simone
Examiner
Art Unit 1772
May 4, 2005

HP
HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

5/9/05